BioRisk 5: 1–2 (2010)
doi: 10.3897/biorisk.5.854
http://biorisk-journal.com/

EDITORIAL

A peer-reviewed open-access journal
BioRisk

Monitoring climate change with Dragonflies: Foreword

Jeffrey A. McNeely

IUCN, Gland, Switzerland

Corresponding author: *Jeffrey A. McNeely* (jam@iucn.org)

Academic editor: *Jürgen Ott* | Received 19 August 2010 | Accepted 31 August 2010 | Published 30 December 2010

Citation: McNeely JA (2010) Monitoring climate change with Dragonflies: Foreword. In: Ott J (Ed) (2010) Monitoring Climatic Change With Dragonflies. BioRisk 5: 1–2. doi: 10.3897/biorisk.5.854

Climate change has become a cold reality for the public, or a hot disaster for those who are suffering from extreme heat-related events such as the destructive fires in Australia in early 2009. The symptoms of climate change are no longer possible to ignore, with polar ice caps melting, glaciers receding, and the distribution of breeding birds steadily moving northward.

The combination of sound science, as illustrated through the regular reports of the Intergovernmental Panel on Climate Change (IPCC); the growing public awareness as illustrated by the Oscar-winning film, "An Inconvenient Truth" narrated by Al Gore; and the solid economic case made by the Report prepared for the British Government by former World Bank Chief Economist, Nicholas Stern, have been crucial in putting the issue squarely before the public.

And individuals, the private sector, and governments are all responding in various ways. Terms like "carbon sequestration", "carbon footprint", and "energy efficiency" are now part of the public vocabulary. All of this indicates that society at large may well be finally taking the issue seriously.

But despite all of this, our understanding of the dynamics of climate change remains surprisingly poor. But perhaps this is not so surprising, given the great complexity of the global climate system, and the diversity of its symptoms in various parts of the world. An effective means of providing solid scientific evidence for the changing conditions would be a boon to decision-makers, from an individual to a Head of State. **Monitoring Climate Change with Dragonflies** provides a novel and cost-effective approach, using dragonflies as a means of monitoring climate change. As the authors

Copyright *J.A. McNeely*. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

of the various chapters have made very clear, dragonflies offer numerous advantages. They are relatively easy to identify; they are very sensitive to changes in environmental conditions, including climate; different species have different distributions, with a sufficient number of species to provide a rich source of data; they reproduce relatively quickly, so changes over generations are revealed in a timely manner; and research to date has indicated that the distribution of dragonflies is very sensitive to climate change. Added to these advantages is another important one in a time of economic distress: the monitoring process can be carried out on a regular basis on a very cost-effective budget. Dragonfly studies are not capital-or equipment-intensive activities. Further, the kinds of monitoring that are required can be done largely by students or interested amateurs, with appropriate leadership and oversight from qualified experts.

All of these advantages indicate that dragonflies, which play many important ecological roles in aquatic ecosystems, may become one of our most important allies in documenting the effects of climate change. They can help provide early warning, detailed evidence, rapid indication of changing climate patterns, and much else besides.

The rich flow of data that can come through a widespread collaborative network collecting regular information on the distribution of dragonflies in relation to climate change can also help provide insights into the responses that might be required to modify land use to the emerging climatic reality. **Monitoring Climate Change with Dragonflies** provides an important new tool for dealing with arguably the most important environmental challenge facing modern humanity. It provides a solid foundation on which subsequent research can be built, and can help ensure that responses to climate change are as appropriate as possible.

Jeffrey A. McNeely

Chief Scientist
IUCN
Gland, Switzerland